



### RECENT EVENTS

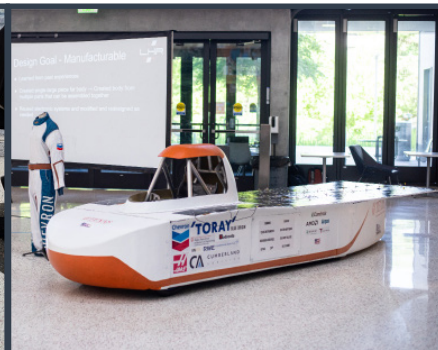
Despite having to worry about finals as the semester came to an end, our students put in an insane amount of effort to make this one of Longhorn Racing's biggest months yet. Members of all three teams pulled numerous all-nighters to ensure that all of our cars were finished and ready for competition this coming month. All this hard work paid off when Longhorn Racing unveiled the three brand new cars at our 2022 Unveiling: Electric's Easy Driver, Solar's Lonestar, and Combustion's The Friendly Goose. All three are set to compete this summer and we are excited to see how they perform. The Combustion and Electric teams will be competing at the Formula SAE and Formula SAE Electric competition, and the Solar Team will compete at the Formula Sun Grand Prix

Not only did our three design teams work hard to finish the cars for Unveiling, but our Operations team also worked diligently to ensure that our Unveiling Event ran smoothly. Whether it was reserving space, acquiring audio and video equipment, managing guest lists, providing refreshments, and so much more, all the members of our Operations team helped ensure this was one of our best Unveilings yet!

We are incredibly thankful for all the people who came out to support us at our Unveiling as well as the people that have helped us throughout the year. None of what Longhorn Racing does would be possible without the help and support of our corporate partners, faculty advisors, past alumni, students, and the Cockrell School. It was a great experience to have them all together for this event, and the next few months look like they will be a great time for Longhorn Racing. If you'd like to see how we do in our races, head over to our social media accounts to get weekly updates.



Easy Driver



Lonestar



The Friendly Goose

### CONNECT WITH US

Website:

[www.longhornracing.org](http://www.longhornracing.org)

Social Media:

Facebook: @UT.LonghornRacing

Instagram: @LonghornRacing

LinkedIn: LonghornRacing

Make a contribution

<http://tinyurl.com/donateLHR>



### MONTHLY UPDATES

Since the last newsletter, the combustion team has focused on two things: our Unveiling presentation and preparing for the June FSAE competition. Our members have been putting in countless hours in order to finalize everything on the car for these two events, and we're very proud of our progress. For the first time in five years, the combustion team has completed a car in a one year cycle, and we owe this feat to the tenacity and drive of all of our members.

Right - The members of the Combustion team at Unveiling with the leads in front



The preparation for unveiling was grueling, but we did complete everything in time. While the final mechanical preparation was done in the ETC garage, all aero and livery work was finished at the JJ Pickle Research Campus by our composites and aerodynamics teams. In the weeks leading up to unveiling, they managed to do the impossible and complete a fully-functional aerodynamics package to the order that our team has not seen in a long time. After countless simulations and design revisions, the final aerodynamics package optimizes weight and performance, delivering enough downforce to hopefully give us a competitive edge at this year's FSAE Michigan competition in June. The livery, inspired by UT colors, is a product of the aerodynamics team as well, as they worked hard to make the car look absolutely gorgeous for this year. And all the effort was well rewarded as our car, codenamed Friendly Goose, made its official debut outside the EER as it revved to life before a crowd of onlookers.



And though the preparation for Unveiling and the execution went well, the work for the combustion team is not yet over. Since unveiling, our members have been balancing finals and internships in order to make time to complete work on the car for final preparations for competition. We have been putting the final touches on the car as we

continue on with powered run testing, aiming to stress the car through situations resembling the FSAE competition dynamic events in order to see design faults early and correct them before we head to Michigan for the summer. The process has been going well so far as we have caught several key issues with the vehicle and had time to correct them.

We look forward to updating you all after our competition this summer. Please wish us luck in Michigan!

Above - The Friendly Goose ending Unveiling with a bang  
Left - The Combustion car, with 100% of the aero and 100% less car







### MONTHLY UPDATES

The Electric team has been pushing to get the car running in preparation for competition. The FSAE electric competition will take place in Lincoln, Michigan from June 14-19.

The Aerodynamics system finished the aero components and painting the wings and frame. The system also received the final piece of the aerodynamics package, the undertray, which spans the length of the car and is beneath the driver.

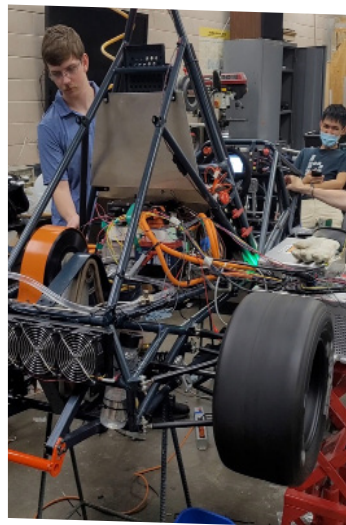
The Driver Controls system focused on bleeding the brakes and putting the pedal assembly together as well as molding the seat of the car which fits perfectly.

The Dynamics system remade the control arms using a new jiggling method; this new technique prevents warping during the welding process, making parts of the dynamics system stronger and fit better. The new tires and rims have also arrived and are on the car in preparation for powered run.

The Electronics system worked on creating the wiring harness for all of the electrical parts in the car. They have been creating long lengths of wiring in order to deliver electricity to

the parts which need it. Electronics has also been collaborating with the Battery subsystem to create a stable power delivery system for the high voltage and low voltage systems.

The Powertrain system has nearly finished the all its tasks involving the battery cooling, and the drivechain. Powertrain has been working closely with the Electronics



system, and the battery is now ready for powered run. The cooling loop is prepared for the electric motor and inverter. The drivetrain assembly has been completed and is prepared for our first run.

The Electric team thanks everyone who attended Unveiling and missed the ones that could not make it – it was a huge success!



Above - The electronics system tests the motor

Left - Electric team members with representatives of our title partner, Chevron

Right - The complete Electric team with all the leads in the first row





### MONTHLY UPDATES

This past month, many hours were spent at the Pickle Research Campus putting together the car for Unveiling. For the first time in almost seven years, we unveiled a brand new vehicle. Thank you to all who attended, and to those who couldn't make it, I hope you got to see some of the clips from the event. It was exciting to get to reveal Lonestar to the world!

The body system worked hard to finish the outer shell components and enclosures. All the composite shell pieces have been built and assembled besides the canopy latch. The electronics enclosure has been tested, and the battery box is going through a small redesign. Lastly, our heat treated frame is en route back to Austin.

The dynamics system has spent countless hours in the shop completing their assemblies. They are currently working on a small redesign to the rear suspension to fit properly within the bottom hull. The front suspension and steering assembly have also been fitted onto the frame.



Above - The Solar team with long time advisor and UTSVT founder, Dr. Gary Hallock

Below - Members of the Solar team gathering around the new car after Unveiling



The BPS group has been maintaining their system while also trying to introduce battery balancing, a feature that will help our efficiency during the race. While working on integration, they were able to run the electrical system without faults.

The Controls system has been finalizing their software logic and is now able to control the car and its ignition sequence, accelerator/brake logic, and indicator lights. They also implemented a one-pedal drive mode using regenerative braking, similar to a Tesla.

The Data Acquisition system has been working on their visualization dashboard and communication logic with the Telemetry system. They ran a system test and found some small issues with the communication that are now being debugged.

The Power Generation system focused on their custom MPPTs. Now that the hardware is manufactured, they have been implementing their researched algorithms and are testing the devices with the rest of the system and solar array.

Power Systems have been creating a full-car wire harness to be used by all systems. They made backup copies of our PCBs in case the existing systems malfunction.

Solar has made a lot of exciting progress in this past month, but we are not done yet. We are pushing hard towards the finish line in Topeka, and we're so excited to show our car off at competition!